

## Chapter 2.6

## VIRGINIA COASTAL RESOURCES MANAGEMENT PROGRAM

Virginia's coastal zone encompasses all of Virginia's Atlantic coast watershed as well as parts of the Chesapeake Bay and Albemarle/Pamlico Estuary watersheds. This coastal zone area, also known as Tidewater Virginia, includes 29 counties, 15 cities, 42 towns, as well as all waters therein and out to the three-mile Territorial Sea boundary.

The Virginia Coastal Resources Management Program, commonly known as the *Virginia Coastal Program*, was established in 1986 to protect and enhance these coastal resources. The program is a network of state agencies and Tidewater local governments that implement laws and policies to carry out this responsibility as authorized under the federal Coastal Zone Management Act of 1972, as amended. Through this network, the Program manages sand dunes, wetlands, underwater lands, fisheries, point and nonpoint source air and water pollution, shoreline sanitation and a variety of other areas of particular concern such as coastal wildlife habitats and public access, waterfront redevelopment and underwater historic sites. Executive Order Number Twenty-Three (98), signed by Governor James Gilmore in June 1998, continues the Virginia Coastal Program and directs all state agencies to carry out their legally established duties consistent with the Coastal Program in a manner that promotes coordination among agencies in achieving the Program's goals and objectives:

- Prevention of environmental pollution and protection of public health.
- Prevention of damage to the natural resource base.
- Protection of public and private investment.
- Promotion of resources development.
- Promotion of public recreation opportunities.
- Promotion of efficient government.
- Provision of technical assistance.

Core regulatory agencies in the Virginia Coastal Program network include the Virginia Marine Resources Commission (VMRC), the Department of Environmental Quality (DEQ), the Department of Game and Inland Fisheries (DGIF), the Department of Conservation and Recreation (DCR), the Virginia Department of Health (VDH), and the Chesapeake Bay Local Assistance Department (CBLAD). Other agencies participating in the Program include the Department of Historic Resources (DHR), Department of Forestry (DOF), Department of Agriculture and Consumer Services, the Virginia Institute of Marine Science (VIMS), the Virginia Economic Development Partnership (VEDP) and the Virginia Department of Transportation (VDOT). DEQ serves as the lead agency for Virginia's networked Coastal Program, and helps agencies and localities to develop and implement coordinated coastal policies.

By virtue of having a federally approved Coastal Program, Virginia also has the authority to require that federal actions within the coastal zone be consistent with Virginia's Coastal Program. Environmental Impact Review staff at DEQ review federal actions in the coastal zone for consistency with Virginia's Coastal Program laws and policies. Together, Virginia's localities, state agencies and NOAA form an effective intergovernmental partnership.

In addition to providing a forum for development and coordination of cross-cutting coastal issues, the Virginia Coastal Program provides grant assistance to state agencies and local governments. Having a federally approved coastal zone management program qualifies Virginia to receive about \$3 million per year in federal funds under a formula allocation based on miles of shoreline and coastal zone population. The Office of Ocean and Coastal Resource Management at the National Oceanic and Atmospheric Administration (NOAA) allocates these funds under the Coastal Zone Management Act (CZMA). These grant funds are equally matched by Virginia's state agencies and local governments.

Since 1986, the Commonwealth has received over \$35 million in federal funds, matched by over \$32 million in state and local matching funds to implement its coastal program, and carry out a broad scope of state and local projects. These projects include the following areas (water quality specific project areas are in bold):

- **coastal technical assistance**, e.g. local environmental planning by regional planning district commissions and CBLAD, tributary strategy development on state and local level;

- **enforcement**, wetlands and dunes permit compliance and inspection by VMRC and local governments;
- **environmental management**, e.g. support for the business and industry guide to environmental regulations, natural resource mapping by DCR and DGIF and the Elizabeth River Project Watershed Action Plan;
- **habitat and monitoring**, e.g. annual support of the Chesapeake Bay Submerged Aquatic Vegetation Survey by VIMS, oyster reef restoration, and shorebird habitat protection;
- **land acquisition**, e.g. New Point Comfort in Mathews County, acreage in the North Landing Natural Area Preserve in Virginia Beach, the Northwest River Natural Area Preserve in the City of Chesapeake, expansion of the Kiptopeke State Park, and habitat preservation areas on Virginia's Eastern Shore;
- **local government planning and comprehensive plans**, e.g. the Gloucester County Creative Rural Development Program, Appomattox River Corridor Study, and Northern Neck Land Use Tracking and Mapping System;
- **public access planning and construction**, e.g. Kiptopeke State Park Boardwalk and Hawk Observatory, dune crossovers in the Town of Cape Charles, harbor improvements in the Town of Wachapreague, nature and canoe trails on the Elizabeth River and West Neck Creek, Alton's Creek Boardwalk on the North Landing River, and access planning, such as public access plans for the Dragon Run, Potomac River, and Mayo Island;
- **public education**, e.g. A Guide to the Bay Act, the Virginia Erosion and Sediment Control Field Manual, Bayscapes, and wetlands training and education;
- **shoreline management**, e.g. shoreline management BMP's by VMRC, and sediment suspension studies by VIMS;
- **special area management planning** in Northampton County and for Virginia's Southern and Dragon Run Watershed Areas;
- **wetlands**, e.g., support for the Virginia Wetlands Management Handbook [VIMS] and the Wetlands Guidelines [VMRC], tidal and nontidal wetlands surveys and mapping, and wetlands planning and policy); and,
- **water quality**, e.g. the Virginia Nonpoint Source Pollution Control Program [DCR], water quality modeling by VIMS, support for the Virginia Citizen Water-Quality Monitoring Program, fecal coliform studies by VA Tech, Chesapeake Bay Preservation Area Program implementation and mapping by Virginia's Bay localities, stormwater and groundwater studies, and support of the Polecat Creek Watershed Project at CBLAD.

## Tributary Strategies

Funding from the Virginia Coastal Program was key to the development of nutrient reduction strategies in Virginia's Chesapeake Bay tributaries. The 1987 Chesapeake Bay Agreement included a goal of reducing the flow of nutrients into the bay by 40 percent (of 1985 levels) by the year 2000 to improve water quality and protect living resources. More than 20 Coastal Program grants to state and local agencies, totaling over \$1.2 million, helped Virginia educate and involve local governments and the public in decision-making and development of strategies to reduce nutrients to Virginia's coastal waters. The effect of this cooperative strategy effort was passage of the Virginia Water Quality Improvement Act of 1997, resulting in a total of \$92.31 million in funding and accrued interest (FY 97 – FY 2001) towards reduction of nonpoint source pollution.

In addition to support for Virginia's Tributary Strategies, several new and ongoing efforts exemplify the Virginia Coastal Program's unique opportunity to fund and support projects that protect the Commonwealth's coastal resources, while encouraging intergovernmental coordination and partnerships with a broad constituency. They include the Virginia Coastal Nonpoint Pollution Program, Virginia Clean Marina Program, Southern Watershed Special Area Management Plan, and the Virginia Oyster Heritage Program. Each of these projects address water quality issues as well as some focus on monitoring and restoration of living resources to improve water quality in Virginia's coastal waters.

## Virginia Coastal Nonpoint Source Pollution Program

On May 15, 2001, Virginia became the sixth state to receive full approval of its *Coastal Nonpoint Pollution Control Program* from NOAA and EPA. Development of the program was initiated in the fall of

1992 in response to Section 6217 of the Coastal Zone Management Act Reauthorization Amendments of 1990. Section 6217 of the Act requires that state's with an approved coastal zone management program, develop a Coastal Nonpoint Source Pollution Control Program. The statute is meant to restore and protect coastal water quality through the application of economically achievable "best management practices" implemented through enforceable state policies and mechanisms. The federal government defines state enforceable policies and mechanisms as state and local regulatory controls and/or non-regulatory incentive programs combined with state enforcement authority.

There are 56 management measures contained in the *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*, a comprehensive technical document issued by EPA on methods to abate and control nonpoint pollution in coastal areas. The chapters include management measures in the following areas: agriculture, forestry, urban areas, marinas and recreational boating, and hydromodification (channelization and channel modification, dams, and streambank and shoreline erosion). This document is available on EPA's Web site at <http://www.epa.gov/owow/nps/MMGI/>

In order to gain approval of its Coastal Nonpoint Pollution Control Program, Virginia was required to show that:

- 1) state programs include appropriate management measures (defined in the above guidance) to control NPS pollution;
- 2) the state has a means of implementing the management measures, and;
- 3) the state has sufficient statutory authority and enforcement capabilities to ensure implementation of management measures to reduce NPS pollution impacts on coastal resources.

With approval of its Coastal Nonpoint Pollution Control Program, Virginia remains eligible for full funding under the Coastal Zone Management Act and Section 319 of the Clean Water Act.

Following are some of the projects that contributed to the approval of Virginia's Program:

- A series of workshops on the proper use of irrigation systems and development of informational material on irrigation best management practices;
- Development of a web-enabled database for use by local government to track erosion & sediment control activities; development of a model local stormwater ordinance; and an economic evaluation of incorporating BMPs into site design;
- Development of shorelands planning protocol for use by local governments to enhance planning capabilities for areas adjacent to shorelands;
- A statistical analysis of the impact of channelization activities and dams in Tidewater Virginia on instream & riparian habitat;
- A plasticulture guidebook for local government and farmers recommending practices to protect water quality for operations using plastic mulch;
- Development of the Virginia Clean Marina Program to provide technical assistance to marinas and recreational boaters.

#### *Virginia Clean Marina Program*

There are approximately 1000 marinas and 250,000 boaters sharing the natural and economic benefits of Virginia's waterways. With each new boater and marina operator the potential impact to our waterways from nonpoint source pollution increases. Studies have shown, however, that an increasing number of recreational boaters support efforts to prevent and reduce pollutants from entering Virginia's waterways, and that higher occupancy rates exist at marinas where Best Management Practices (BMPs) have been implemented.

On January 12, 2001, marina operators, marine industry representatives and state officials launched the Virginia Clean Marina Program at the Virginia Boat Show. The Program, funded by the Virginia Coastal Program with CZMA grants from NOAA, is a voluntary initiative. This initiative is designed to educate and give technical support and special recognition to marinas that implement BMPs that go above and beyond regulatory requirements, minimizing potentially negative impacts on water quality and coastal resources. The program is a joint agency initiative between the Department of Environmental Quality, Department of Conservation, and Recreation and Virginia Sea Grant at the Virginia Institute of Marine Science.

A Marina Technical and Environmental Advisory Committee (MTEAC), made up of representatives from Virginia's coastal network of state agencies, the marine trade industry, and the recreational boating and environmental communities, was established in 2000 to direct development of the Virginia Clean Marina Program. This committee spent several months refining a Virginia Clean Marina Guidebook for use by marina operators and recreational boaters. The Guidebook provides information on implementing best management practices (BMPs) at marinas. It also provides summaries of the pertinent state and federal laws affecting marinas, as well as agency contacts for more information. Fact sheets provided in the guidebook can be copied and distributed to boaters. The guidebook is available on-line at <http://www.vims.edu/adv/vamarina/>. A Marina Technical Advisory Program was established at the Virginia Institute of Marine Science Sea Grant Office in 1999. A Marina Technical Advisory Specialist is currently focusing on developing technical information on environmental and economic issues, and working with marinas who have pledged to achieve voluntary designation as a Virginia Clean Marina.

In November 2001, five marinas were awarded Virginia Clean Marina Designation. Fourteen marinas have pledged to participate in the program and are working toward designation. The goal is to have at least fifty full-service Virginia Clean Marinas by September 2003. Workshops were conducted in March and April of 2001 to introduce the program and present information on a series of topics, including stormwater management, pollution prevention and derelict vessels. Additional workshops are being planned.

For further information about Virginia's Coastal Nonpoint Pollution Control Program, and the Virginia Clean Marina Program and other coastal nonpoint program initiatives, please contact Mark Slauter, (804) 692-0839 or e-mail: [mslauter@dc.state.va.us](mailto:mslauter@dc.state.va.us). Also visit the Virginia Clean Marina Web site at <http://www.deq.state.va.us/vacleanmarina/>.

### **Virginia Oyster Heritage Program**

The oyster is a keystone species in Virginia's coastal waters. Not only do oyster reefs provide habitat for many species of finfish and shellfish, they are also natural water purifiers. They filter algae and sediments from our coastal waters, which increases water clarity and improves light penetration. A single adult oyster can filter up to 60 gallons of water a day. Seagrass beds, which require light, benefit from the oyster's filtering efforts and in turn provide habitat and feeding grounds for many other important species of fish and birds. The presence of seagrass is a key indicator of good water quality. The oyster resources of the Chesapeake Bay have been in a state of continuing decline for at least the past century. Before their decline, the Bay's oysters could filter an amount of water equal to the volume of the entire Bay in three to six days. Today, it takes a year or more for our remaining oysters to do the same job. There is no doubt that oysters and oyster reefs provide us with very direct economic and environmental benefits.

In March 1999, the Virginia Department of Environmental Quality, through the Virginia Coastal Program, and the Virginia Marine Resources Commission, launched a bold initiative to capitalize on recent advances to restore oyster reefs. The Coastal Program and VMRC established a partnership of Virginia state agencies, federal agencies, nonprofit organizations and business groups to form the Virginia Oyster Heritage Program (VOHP). This Program has marshaled the collective resources of its partners toward a large-scale oyster restoration effort, has served as a catalyst for a Baywide commitment for a 10-fold increase in oyster populations over the next 10 years, and has helped galvanize a Baywide strategy to meet this commitment. There was a significant new commitment of federal, State, and private funds for the Virginia Oyster Heritage Program and for Baywide oyster restoration efforts using a similar model.

The goals of the Virginia Oyster Heritage Program are to: construct 3-dimensional (608 feet tall) oyster broodstock sanctuary reefs; create harvest enhancement areas by spreading a 10 inch deep layer of shell around the broodstock sanctuary reefs, providing a sustainable fishery for Virginia watermen; monitor reefs to determine their success in increasing oysters, water clarity and biodiversity; and provide educational materials on the oyster restoration effort and train and use volunteer for reef restocking efforts, and to encourage backyard oyster gardening" to augment restoration efforts.

Phase One of the Virginia Oyster Heritage Program resulted in the construction of nine reefs in the Rappahannock River in 2000 and 2001. Over three hundred of enhanced harvest area were also cleaned and improved by the addition of live oysters and cultch. All nine sanctuary reefs in the lower Rappahannock River have received excellent spatsets in 2001, and have significant populations of oysters. All of the enhanced harvest areas also received a very good spatset in 2001.

The new sanctuary reefs were built using more than one million bushels of cultch, a combination of dredged fossil shells, shucked oyster shells, and surf clam shells. Within three of these new reefs, tests are being conducted to evaluate both ground, recycled concrete, and recycled local shells as reef construction materials. Shell availability for future oyster restoration efforts will be one of the greatest challenges in the near future, and the partnership base of the Oyster Heritage Program has facilitated progress in addressing this issue. Initial results have shown that both the ground concrete and recycled shell have performed similarly to fresh shells. Virginia received a permit to mine fossil shells in the James River in 2001, and this activity provided most of the shells for the harvest areas.

Approximately 5 acres of reef were added to tidal seaside reefs on the Eastern Shore in the summer of 2000 in South Bay, the Wachapreague area and near Metompkin and Cedar Islands, with an additional ten acres restored in 2001 (mostly South Bay and Wachapreague). Recorded spatset on the tidal seaside reefs was extremely high in 2000.

Reef construction on the Eastern Shore is done in tandem with sea grass restoration. In 2001, more than 4 million eelgrass seeds were planted on more than 25 acres in South and Cobb Bays. Now completing their fourth year of study, the Virginia Marine Resources Commission and the Virginia Institute of Marine Science on the Eastern Shore are focusing on the interdependent relationship between oysters and sea grass. This study, as well as others in the Chesapeake Bay, suggests that the ecological value of oyster reefs extends to the survival and abundance of sea grass, an important water quality indicator.

In total, Phase I of the Oyster Heritage Program has resulted in more than \$3 million for oyster restoration funding for the lower Rappahannock during the 2 years of the project, including \$1,500,000 in Coastal Program funding and funds from the Virginia Marine Resources Commission and the U.S. Army Corps of Engineers. Funds from the Saltwater Recreational Fishing License Fund and the Chesapeake Bay Restoration Tax Check-off were also allocated to the Program. This has facilitated the largest targeted restoration effort that has ever been undertaken in the Chesapeake Bay.

A non-profit foundation was established in 2000 to carry the private fundraising aspects of the Virginia Oyster Heritage Program. The Virginia Oyster Reef Heritage Foundation seeks and accepts funds on behalf of the Program in order to achieve the Program's goals. The Foundation has raised over \$250,000, including monies from a Virginia Environmental Endowment challenge grant. A steering committee comprised of representatives of key partners in the Program provides direction in the allocation of these funds. The Foundation serves as a repository of private funds needed to match challenge grants and public agency grants.

Finally, local government and citizen support for the Virginia Oyster Heritage Program has grown since the dedication of the program in March 1999. For example, in March of 2001, the City of Virginia Beach passed an ordinance entitled "My Two Cents for the Oyster Program". This program pledged 2 cents per resident towards restoration of reefs in the Lynnhaven and Elizabeth Rivers, and donated \$8,505 to the VOHP for reef restoration while challenging the other 15 Hampton Roads localities to do the same. Support such as this will continue to be necessary as reef restoration expands in the Rappahannock, on the Eastern Shore and in other areas around Virginia's coastal zone.

The Virginia Seaside Heritage Program (VSHP), a new partnership modeled after the Virginia Oyster Heritage Program, continues restoration of our aquatic resources. Oyster reef and seagrass restoration on Virginia's Eastern Shore are also an element of this new project, slated to begin in the Fall of 2002 with final funding approval from the National Oceanic and Atmospheric Administration (NOAA). Initiated by the Virginia Coastal Program, the VSHP will not only focus on actual restoration of aquatic resources, but also development of a comprehensive seaside inventory and management tools that would form the basis for long term restoration and management strategies. The VSHP will develop a use conflict model, improved enforcement capabilities, public education materials, and ecotourism enhancements.

For more information about the Virginia Oyster Heritage Program, please call Laura McKay, Coastal Program Manager at (804) 698-4323, or Jim Wesson, Virginia Marine Resources Commission, at (757) 247-2121. For more information about the new Virginia Seaside Heritage Program, please contact Laura McKay at the number above.

### **Virginia Southern Watershed Special Area Management Plan**

Since 1992, the Coastal Program has been working in partnership with the cities of Chesapeake and Virginia Beach, and the Hampton Roads Planning District Commission (HRPDC) to develop a Special Area Management Plan (SAMP) for the Southern Watershed Area.

The Southern Watershed Area Management Program (SWAMP) focuses on the development of new and enhanced enforceable policies that protect significant wetland habitats and water quality. The SWAMP seeks to minimize the adverse impact of continued urbanization on the natural resources of the Southern Watershed Area (SWA) by improving the range of tools available to Virginia Beach and Chesapeake to control new development.

The SWA, located in Southeastern Virginia, covers approximately 325 square miles and makes up the southern portions of the cities of Chesapeake and Virginia. The SWA is bordered by the Atlantic Ocean on the east, the Great Dismal Swamp on the west and the North Carolina border on the south, and contains three sub-watersheds: the Back Bay, North Landing River and the Northwest River. The northern area of the two cities is dominated by a pattern of urban development, as are the two adjacent cities of Norfolk and Portsmouth. Industrial development associated with the port facilities and military uses, such as Camp Pendleton and Oceana Naval Station in Virginia Beach, are predominant upon the landscape. The southern portion of these two cities is rural in character, and the land uses are primarily agricultural, silvicultural, and residential.

The Southern Watershed contains extensive wetlands, including a variety of rare swamp, pocosin and marsh communities that drain into the Albemarle-Pamlico Sound. The Northwest River is the primary source of drinking water for the City of Chesapeake. The area is one of the most biologically diverse regions of the state, supporting more than 40 rare species and 10 terrestrial, estuarine and palustrine wetland communities.

The primary coastal management problem facing the Southern Watershed is the need to preserve its significant natural resources in the face of increasing population and development pressure. As these pressures increase a coordinated effort to minimize the adverse impact of continued urbanization is essential.

The five objectives of the SWAMP are consistent with the Comprehensive Plans of Chesapeake and Virginia Beach and meet the Special Area Management Objectives under the Coastal Zone Management Act:

- To protect and enhance water supplies and natural resources conservation.
- To preserve open lands to help protect and enhance water quality.
- Ensure compatibility of recreational activities and commerce with natural resource protection.
- To maintain the rural character of the Southern Watershed, while providing for rural residential development.
- To sustain agricultural and silvicultural activities in the Southern Watershed.

To achieve the SWAMP objectives as contained in a Memorandum of Agreement between the two cities, the following enforceable policies, which are based upon, and incorporate, locally defined needs and opportunities, are being pursued:

- A. Refine development controls to protect water quality and preserve critical habitat

Tasks: 1) Establishment of a Rural Area Preservation Program in the City of Chesapeake and, 2) Establishment of a mitigation strategy.

B. Improve the effectiveness of preservation districts

Tasks: 1) Modify the definition and delineation of P-1 preservation district in the Virginia Beach Zoning Ordinance and, 2) Modify the definition and delineation of C-1 conservation district in the Chesapeake Zoning Ordinance.

C. Protect habitat through easements and information exchanges

Tasks: 1) Development of Conservation Easement Memorandum of Agreement and, 2) Development of an Information Exchange Memorandum of Agreement.

D. Improve urban and agricultural BMPs

Tasks: Development of a Memorandum of Agreement on Urban and Agricultural Stormwater Best Management Practices.

E. Manage competing waterway uses

Task: Development of a Waterway Use Conflict Management Memorandum of Agreement. (Signed MOA described below.)

In addition, the SWAMP will highlight the economic value of the natural resources through the exploration of sustainable economic development initiatives, including environmentally compatible industries such as nature tourism and sustainable agriculture. The SWAMP also emphasizes research, e.g. water quality data analysis, to support the policy changes, and provisions for stakeholder involvement.

Development of the SWAMP brings a broad cross-section of stakeholders into a cooperative planning process. One example of this cooperative approach is the Water Quality Task Force, which was established to analyze existing water quality data, evaluate the current methods and procedures used to monitor water quality, and make recommendations for future actions. This Task Force includes representatives from the DEQ, U.S. Fish and Wildlife Service, U.S. Geological Survey, DGIF, DCR Division of Natural Heritage, Back Bay Restoration Foundation, DCR Division of Soil and Water Conservation, Hampton Roads Sanitation District and the cities of Chesapeake and Virginia Beach.

#### *Water Use Conflict Educational MOA Signed for the North Landing River*

Representatives from a broad range of local, state and federal agencies gathered on April 30, 2001 at Munden Point Park in Virginia Beach to sign a Memorandum of Agreement (MOA) to improve water use conflict education for the North Landing River. The MOA outlines recommended water use areas to minimize conflict between the diverse set of recreational and commercial users of the River. In addition, the use areas are intended to aid in protection of the valuable wetland ecosystem that surrounds the river by minimizing damage by watercraft.

The MOA includes a Water Use Plan Map for the North Landing River that depicts the areas of the River that are best suited for Low Impact Recreation, General Recreation and Special Use/High Speed Recreation. Low Impact Recreational activities such as canoeing and kayaking are recommended in the smaller tributaries and the narrow northern portion of the River. General Recreational activities, which include most motor boat usage, are recommended in the wider southern section of the River. Finally, high-speed recreational activities such as water skiing and jet skiing are recommended in the broadest and deepest section of the River.

The Cities of Chesapeake and Virginia Beach, Hampton Roads Planning District Commission, Virginia Department of Environmental Quality, Virginia Department of Conservation and Recreation, Virginia Department of Game and Inland Fisheries, United States Army Corps of Engineers, United States Coast Guard and the United States Fish and Wildlife Service all participated in the development of the MOA and signed the finished document.

Implementation of the MOA will include development of educational materials for inclusion in boater safety programs and installation of signs with the Water Use Plan Map at launch areas. In addition,

a survey of boaters on the North Landing River will be performed both before and after implementation of the educational program to determine its effectiveness.

For more information on the SWAMP, please contact Eric Walberg, HRPDC, at (757) 420-8300 or [ewalberg@hrpdc.seva.net](mailto:ewalberg@hrpdc.seva.net), or Laura McKay, Coastal Program Manager, at (804) 698-4323 or [lbmckay@deq.state.va.us](mailto:lbmckay@deq.state.va.us).